Columbia State Community College

2019 Governor's Investment in Technical Education (GIVE)

Cyber Defense Mobile

Lead Entity: Columbia State Community College

Fiscal Agent: Columbia State Community College

IN PARTNERSHIP WITH:
Northern Middle Tennessee Workforce Board
Williamson Chamber of Commerce
Williamson County Schools
Tractor Supply, CJC Technologies, C Spire, Franklin City Government

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Funding requested:
$ 841,320

President of Columbia State Community College
Institution (Fiscal Agent)

Project Director (Lead Entity)

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Cyber Defense Mobile

Introduction

The security of networks, computers, and personal devices is a growing concern among corporations and individuals alike. Therefore, proactive measures of protecting against criminal and unauthorized threats is commonplace and key to the viability of any organization. In fact, the number of information security analysts or positions that require the knowledge and skills of this program is projected to increase by almost eight percent by 2020 and 37.8 % in Tennessee by 2025.* The Cyber Defense Mobile (CDM) program is a collaborative effort between Columbia State Community College (CoSCC), Williamson County schools (WCS), the Williamson County Chamber and Williamson County industry partners to increase the number of employees with cyber defense training in the middle Tennessee area. The initial program will serve 2 WCS high schools per semester using a transformable, mobile classroom designed to seat 30 students per class at each high school. The unit will serve as a venue to deliver dual enrollment and dual credit classes in the CoSCC Computer Information Technology (CITC) AAS and technical certificate programs in Cyber Defense. The unit will eventually serve 5 high schools per semester and therefore, serving all 10 WCS high schools during an academic year. The unit will also be used for an annual WCS "Hackathon" competition for all high schools as an inspiration to choose Cyber Defense or other IT careers.

Columbia State Community College

Columbia State established in 1966 is Tennessee's first community college and serves 9 counties in the southern middle Tennessee area with Williamson being the northern most county in the service area. Total fall 2018 enrollment was approximately 6,300 with 2,200 enrolled at the

1

Williamson County campus. The CITC program at the college has over 200 students listed as majors and has grown over the past few years with the Williamson campus leading the way with a 100% increase since 2016.

Williamson County Schools

Williamson County Schools has approximately 40,000 students enrolled in P-12 for the 2018-2019 school year. There are 48 school sites: 10 high schools, 10 middle schools, 27 elementary schools, one K-8 school and the Alternative Learning Center. The district's graduating class of 2018 posted an ACT composite score of 25.4, the highest in the history of the district. Computer science offerings are limited throughout the county and no Cyber Defense program currently exists. However, as part of this initiative, WCS will develop a new program of study in Cyber Defense with dual enrollment opportunities with CoSCC.

* Projections Central, website funded by a grant awarded by the US Department of Labor's Employment & Training Administration.

Section I Demonstration of Need

The concept of the CDM program was driven by the needs of area industry partners to increase the number of employees trained in Cyber Defense and IT in the middle Tennessee area. Data indicates a strong, current demand for employees with these skillsets and projections of future needs point to very large increases as Williamson County and middle TN continue to attract more corporate headquarters such as Mars Pet Care, Tractor Supply Company, Nissan, Mitsubishi, and Jackson National Life. Accomplishment of this primary goal can only occur through an increase in the number of students completing technical certificates, associates of applied science, associates of science, and Bachelor of Science degrees. Therefore, CDM will be in alignment with the state of Tennessee's Drive to 55 initiative for increasing the number of citizens with postsecondary credentials. Students participating in the program will also earn industry certifications. Delivery of dual enrollment Cyber Defense and IT courses at every WCS high school will be the principal mechanism in reaching program goals. Easy access to classes, the alluring design of mobile unit, and the excitement stirred by the county Hackathon will entice students to select Cyber Defense and IT as academic and career paths. Over 400 students will be served by the end of the grant and another 300 annually.

Drive to 55

Williamson County leads the state of Tennessee in postsecondary degree attainment with over 57% of all residents earning a bachelor degree or higher. While this figure is impressive, the contrasting point must be made that over 40% of Williamson County residents do not have postsecondary credentials. CDM will provide an avenue for credential earning while students build skills that are highly valued. It is estimated that over 300 students will use CDM dual enrollment opportunities annually in pursuit of technical certificates, associates degrees, and/or

Bachelors of Science degrees. Students may opt for early completion routes for technical certificates and associate degrees.

2018 LEAP Occupational Analysis

The 2018 LEAP Occupational Analysis lists Information Security Analysts as an IN-Demand IT Occupation for 3 of the 9 TNECD regions including Northern Middle which includes Williamson County. Other IT occupations included for the Northern Middle region as In-Demand included Computer Programmers, Software Developers, Web Developers, Network Administrators, and Computer Network Support Specialist all of which require skills sets included in the CDM program.

Department of Labor Bureau of Labor Statistics

National Employment for 15-1122 Information Security Analysts

Employment (1)	Employment RSE (3)	Mean hourly wage	Mean annual wage (2)	Wage RSE (3)
108,060	2.0 %	$49.26	$102,470	0.5 %

Percentile wage estimates for this occupation:

Percentile	10%	25%	50% (Median)	75%	90%
Hourly Wage	$27.28	$35.52	$47.28	$60.99	$75.28
Annual Wage (2)	$56,750	$73,890	$98,350	$126,870	$156,580

MIT Living Wage Calculator for Williamson County TN

Hourly Wages	1 Adult	1 Adult 1 Child	1 Adult 2 Children	1 Adult 3 Children	2 Adults (1 Working)	2 Adults (1 Working) 1 Child	2 Adults (1 Working) 2 Children
Living Wage	$11.73	$23.20	$26.69	$32.80	$18.50	$22.10	$24.54
Poverty Wage	$5.84	$7.91	$9.99	$12.07	$7.91	$9.99	$12.07
Minimum Wage	$7.25	$7.25	$7.25	$7.25	$7.25	$7.25	$7.25

TBR Education and Workforce Maps

Job outlooks for Information Technology and Computer Networking both of which are key elements to Cyber Defense have ratings of A (Excellent) on TN Education and Workforce Maps. This data set projects annual job growth rate in Workforce Investment Area 8 for all IT jobs with related degrees taught at TBR institutions to be 3.1% as compared to all jobs statewide at 1.3%. IT jobs for the state of Tennessee for the year 2024 is projected at 47,330 with a ratio of graduates to jobs of 0.96. Annual statewide growth rate is projected at 2.3% for IT positions. Computer Networking jobs are projected to be 2,018 by 2024 with a growth rate of 3.6% and a ratio of graduates to jobs of 0.04

JOBS4TN.GOV

JOBS4TN.GOV sites 5,480 annual openings in Computer & Mathematical occupations in Tennessee with 140 openings specific to Information Security Analyst positions. Typical Annual Salary for Computer & Mathematical Occupational Area in Williamson County TN $72,154.

Additional Supporting Information

Projections Central, website funded by a grant awarded by the US Department of Labor's Employment & Training Administration stated that the number of information security analysts or positions that require the knowledge and skills of this program is projected to increase by almost eight percent by 2020 and 37.8 % in Tennessee by 2025.

LinkedIn website stated on 8/26/19 that 1,000 cyber security jobs currently exist in the metro Nashville area with 90 openings.

Data sited by Matt Largen, President of the Williamson Chamber, indicates 1,500 currently open IT positions in Williamson County.

Letters of support from area industry partners CSpire, CJC Technologies, and Williamson Inc. indicate an immediate need in their organizations as well as their peers.

Section II Program Plan

CDM will be a convenient program for WCS students with stackable credentials for a variety of higher education pathways. Convenience will be found not only with the mobile lab, but also the multiple dual enrollment and dual credit opportunities Columbia State provides for WCS students. For fall 2019, CoSCC has 21 dual enrollment classes embedded in Williamson County high schools with 403 students enrolled another approximitly150 students commute to the

CoSCC campus. Articulations for 20 dual credit course are currently in effect several of which pertain to the Cyber Defense paradigm and the CDM initiative will drive the development of others specific to Cyber Defense. The pathway that WCS students start in Cyber Defense is easily transitioned to higher education at the TCAT, community college, and university levels. Students wishing to complete a credential can earn a TCAT diploma, community college technical certificate, an associates of applied science, and/or a bachelor degree. Completed coursework often comes with an industry certification or the necessary preparation to sit for an certification exam. The following outlines pathway options for CDM students.

Pathways

Pathways for this project include five courses at Williamson County Schools that feed into either a Cyber Defense Technical Certificate or a CITC AAS Degree with a Cyber Defense Concentration at Columbia State. A full course listing is available in Appendix 1.

Project Timeline

CDM will be implemented in 2 phases. Phase I will serve as a pilot with 2 schools hosting the mobile unit for dual enrollment Cyber Defense classes in the fall of 2020 and an additional 2 schools in the spring of 2021. In Phase II, the mobile unit will serve all 10 of WCS high schools.

Dec. 2019	• Order equipment • Hire instructor • Place Cyber Defense course in WCS and CoSCC dual enrollment class schedule • Develop dual credit articulations for CDM technical certificate
Spring 2019	• Purchase equipment • Install furniture and equipment in mobile unit • Install electrical connections at 2 high schools • Promote Cyber Defense class at 2 high schools • Enroll students into fall Cyber Defense classes • Late spring, unveil mobile unit at open house

Fall 2020	- Phase I of CDM begins - Hold first Cyber Defense courses at 2 WCS high schools (60 students) - Hold advising sessions with students for future post-secondary opportunities at CoSCC and other institutions including universities. - Monitor student progress at weeks 3, 7, and 10 of semester and communicate progress with students and counselors using Navigate system - Promote Cyber Defense class at 2 additional WCS high schools. - Place Cyber Defense class in spring dual enrollment class schedule. - Enroll students in spring 2021 Cyber Defense class - Hold first Hackathon competition between the 2 schools - Review of program and progress towards goals
Spring 2021	- Hold Cyber defense class at 2 new WCS highs schools. - Hold advising sessions with students for future post-secondary opportunities at CoSCC and other institutions including universities. - Promote Work-Based-Learning (WBL)opportunities for summer placement - Monitor student progress at weeks 3, 7, and 10 of semester and communicate progress with students and counselors using Navigate system - Promote Cyber Defense class at all WCS high schools. - Place Cyber Defense class in fall dual enrollment class schedule. - Hold Hackathon competition between the 2 schools - Place first students with industry partners for WBL. - Review of program and progress towards goals
Summer 2021	- Students participate in WBL with industry partners. - Student progress is monitored daily by onsite supervisor and weekly by school administrator.
Fall 2021	- Phase II of CDM begins. - Hold Cyber Defense courses at 5 WCS high schools (150 students) - Hold advising sessions with students for future post-secondary opportunities at CoSCC and other institutions including universities. - Monitor student progress at weeks 3, 7, and 10 and communicate with students and counselors using Navigate system - Promote Cyber Defense class at 5 WCS high schools. - Place Cyber Defense class in spring dual enrollment class schedule. - Enroll students in spring 2021 Cyber Defense class - Hold first Hackathon competition between the 5 schools - Review of program and progress towards goals
Spring 2022	- Hold Cyber defense class at 5 WCS highs schools (This would result in all 10 WCS high schools offering the course in academic year 2021-22.) - Hold advising sessions with students for future post-secondary opportunities at CoSCC and other institutions including universities. - Promote Work-Based-Learning (WBL) opportunities for summer placement - Monitor student progress at weeks 3, 7, and 10 and communicate with students and counselors using Navigate system - Promote Cyber Defense class at all WCS high schools.

	• Place Cyber Defense class in fall dual enrollment class schedule. • Hold Hackathon competition between schools • Students with industry partners for WBL. • Review of program and progress towards goals
Summer 2022	• Students participate in WBL with industry partners. • Student progress is monitored daily by onsite supervisor and weekly by school administrator

Objectives

Phase I

➢ 30 students will enroll at 4 schools for a total of 120.

➢ 75% of enrolled students (90) will pass coursework with a grade of C or better

➢ 50% of students (60) will enroll in additional post-secondary classes for subsequent semester.

➢ 25% of students (30) will participate in WBL

Phase II

➢ 30 students will enroll at 10 schools for a total of 300

➢ 75% of enrolled students (225) will pass coursework with a grade of C or better

➢ 50% of students (150) will enroll in additional post-secondary classes for subsequent semester.

➢ 25% of students (75) will participate in WBL

➢ 10% of phase I students (12) will complete a technical certificate in Cyber Defense at Columbia State

➢ 20% of phase I students (24) will enroll in Columbia State's AAS CITC Cyber Defense program

➢ 15% of phase I students (18) will enroll in a university IT or Computer Science program

Project Totals at End of Summer 2022

➢ 420 students will enroll in cyber defense dual enrollment courses

➢ 315 students will pass coursework with a grade of C or better

➢ 210 students will enroll in additional post-secondary classes for subsequent semester.

➢ 115 students will participate in WBL

➢ 54 students will enroll at postsecondary institutions in IT or Computer Science programs

Governance and Accountability

Governance and accountability for the grant will be primarily the responsibility of CoSCC and specifically, the Vice President of the Williamson Campus, Dr. Lampley. Dr. Lampley personally will oversee the budget and order equipment. He will work with WCS to establish schedules for electrical work and class times. He will work with the program director for the CITC program to ensure staffing of the dual enrollment classes and collect data for outcome analysis.

Work-Based-Learning

Work-based-learning (WBL) opportunities will be offered by Williamson County industry partners and students will participate in WBL during the summers after completion of at least one Cyber Defense course. WBL will be coordinated by a WCS administrator and/or a CoSCC administrator based on the enrollment status of each individual student. High school graduates will enroll in CoSCC COP 202. WBL will be a minimum of 120 hours. Students will be

expected to conduct themselves in a professional manner at all times on the jobsite and will be evaluated by their supervisor on the following criteria; oral communication skills, written communication skills, ability to work as a team member, attendance, appearance, and ability to complete assigned tasks. Supervisors will provide weekly evaluations throughout the summer and a final assessment at the end of the summer. Students majoring in CITC program will enroll in the CITC capstone course to meet WBL requirements.

Equipment

The technology equipment for CDM will be housed in a state-of-the-art mobile unit designed to transform into a 1,000 ft.^{2} classroom with space for 30 students and an instructor with laptops. Areas for teamwork planning will also be available. The equipment requested for this grant has been selected to mirror the highest demands of the IT industry in terms of memory and speed of processing. A mix of the most common laptop platforms was selected, Lenovo and MacBook products. Lenovo will utilize Microsoft software which is the most vulnerable to cyber-crime and the MacBook will expose the students to a system with more resistance to viruses. Laptops will be used to provide the proper level of functionality and convenience for a mobile unit. The following items constitute the majority of the equipment to be purchased.

- 25- Lenovo - ThinkPad P52 15.6" Laptop - Intel Core i7 - 16GB Memory - NVIDIA Quadro P1000 - 512GB Solid State Drive - Black
- 6- Apple - MacBook Pro - 15.4" Display - Intel Core i7 - 16GB Memory - AMD Radeon Pro 560 - 2TB Solid State Drive - Space Gray
- Lenovo Secure Managed Client 8332 Network Storage Server - 1 x Intel Xeon E5205 1.86 GHz - 6 TB (12 x 500 GB 2 x 120 GB) - RJ-45 Network V

- 1- 3Feathers Customs 53 ft. double expandable trailer, 1,000 ft^2 w/ HVAC and WiFi

  https://video.wixstatic.com/video/51ced6_c54b8585728345faa99edd51d8854684/1080p/mp4/file.mp4

- 1 used semi-tractor with 300 hp minimum.

Strength of Partnerships

Students participating in CDM will benefit greatly from several existing partnerships that include secondary and post-secondary articulations as well as WBL relationships with IT industry partners.

WCS & CoSCC Articulations

WCS and CoSCC have existing course articulations in information technology and computer science applicable to the CDM program that include INFS 1010, CITC 1300, CITC 1301, CITC 1302, CITC 1320, and CITC 1323 (Appendix 1). Additional course articulations are being developed for CITC 2326 and CITC 2352 in support of this program.

Industry Partnerships

Tractor Supply Company has been an outstanding partner for CoSCC since 2017 by providing CITC student internships, capstone projects, and apprenticeships. CDM students will have WBL opportunities at Tractor Supply Company as well as several others. As IT employers, C Spire, CJC Technologies and the City of Franklin have pledged their support for the CDM program (Appendix 2).

TCAT Articulations

Tennessee Colleges of Applied Technology (TCAT) have a state-wide articulation for IT coursework with the community colleges (Appendix 3). TCAT Dickson is located in Dickson County that adjoins Williamson County's western border. WCS students in Fairview may attend TCAT Dickson and wish to apply TCAT credit to CoSCC. Also, plans in development for the new Technology Building on the CoSCC Williamson campus includes housing some TCAT Dickson technology programs which would potentially create more stackable credential opportunities.

University Programs

Tennessee transfer pathways (TTP) exist in Information Systems and Computer Science (Appendix 4). Columbia State has AS degrees in both that transfer to every state supported university in Tennessee. Several area universities offer programs specific to Cyber Security including:

- Lipscomb University
- Tennessee Tech University
- UT Chattanooga
- University of Memphis

Section IV Budget Plan

Capital Expenses

Mobile Unit

The largest percentage of budget (Appendix 5) requests for the CDM program are embedded in the mobile classroom and computer technology contained within. The mobile unit will enable Williamson County schools to provide advanced computer classes at all campuses as opposed to having a central location for course delivery. This is important due to the lack of trained IT faculty in the county. The attractiveness of the unit per exterior graphic arts will entice students to explore and select IT academic and career pathways. A used semi tractor will move the unit from school to school as needed. Special electrical connections to serve the unit will be installed at each school. The unit will contain 30 of the highest end laptops, a server, classroom tables and chairs, and furniture for student group strategy sessions. The server will allow students to create and defend against computer viruses in a closed, safe system.

Salaries and Benefits

CoSCC will provide an instructor for dual enrollment courses and the grant will pay ½ of the salary and benefits of that instructor. Other expenses listed in this line item would be the semi driver's compensation.

Travel Conference and Meetings

Funding requests in this line item are for instructor training for WCS faculty to expand the usefulness of the mobile unit. Other funds will be used for WBL conferences for industry partners.

Section V Sustainability

The CDM program will continue past the 30-month grant period due to the commitments of WCS, CoSCC, and the industry partners to the program. Partnerships will continue to grow and solidify. Tuition and fees collected by the college for dual enrollment courses will pay the

instructor's salary for courses taught in the mobile unit. WCS will assume maintenance of the unit and will include the technology equipment from the CDM mobile unit as part of their IT resources. Replacement and upkeep of the CDM units will become part of WCS regular IT replacement program. Maintaining communications for CDM program between WCS and CoSCC will be the responsibility of the WCS CCTE Executive Director and the CoSCC Vice President for Williamson Campus and External Services. Maintenance and growth of the WBL aspects of CDM will be the responsibility of the CITC Program Director for CoSCC. Annual meetings will be held with all parties to review outcomes and plan for the coming year.

Section VI Economic Status Acknowledgement

The Appalachian Regional Commission does not identify Williamson County as either distressed or at risk.

ARTICULATION AGREEMENT
Career Cluster 11.0 – Information Technology
COMPUTER INFORMATION TECHNOLOGY
Columbia State Community College
and
Williamson County Schools

STATEMENT OF INTENT

This agreement, entered into by the parties, will provide methods of advance placement to students who complete the stated courses, or a sequence of courses along with other specified requirements. The purpose of this agreement is to encourage students to build on past learning experience and eliminate unnecessary duplication of instruction.

AGREEMENT

This agreement will start with the beginning of the 2017-18 school year and end June 30, 2023. This agreement may be terminated by either party by giving thirty (30) days written notice to the other.

The courses listed below have met the learning outcomes established by Columbia State Community College for the designated college courses.

High School Course	College Course	College Credits
CHS CODING I	CITC 1301 Intro. to Programming & Logic	3
CHS Web Foundations Learning outcomes CITC 1300	CITC 1300 Beginning HTML & CSS	3

1. Edit basic HTML code using a text editor
2. Use CSS to style text using stylesheets
3. Add hyperlinks, images, rules, and color to pages, and format lists, tables, and forms.
4. Preview Web pages and troubleshoot to solve problems
5. Create accessible Web pages by correctly incorporating accessibility standards

Learning outcomes 1301

1. Create a Graphical User Interface (GUI) using Visual Studio Express.
2. Use Visual Studio's Integrated Development Environment to create, test and debug programs.
3. Write simple and complex Event-Driven applications.
4. Apply problem solving skills and data processing techniques in programs.
5. Modularize code using Methods.
6. Use data structures such as arrays.
7. Students will be able to connect a database to Visual C# application.

In addition to satisfactorily completing or being currently enrolled in the designated high school course with a B or better the student must complete the additional requirements.

PROCEDURES

Students wishing to participate in the articulation program must:
1. Meet specific performance requirements as outlined above.
2. Attend the Columbia State Community College assessment day and meet assessment requirements as stated.
3. Pass the assessment requirements for each course for which credit is requested.
4. Enroll at Columbia State Community College within two (2) years of the date of graduation from high school and students will receive credit upon official enrollment at the time of census reporting.
5. Contact the Science Technology and Mathematics Division at Columbia State Community College to request the articulated credit.

_____   _____
President, Columbia State Community College   Date

_____   _____
Director of Schools   Date

ARTICULATION AGREEMENT
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AGREEMENT

This agreement will start with the beginning of the 20__-__ school year and end June 30, 20__. This agreement may be terminated by either party by giving thirty (30) days written notice to the other.

The courses listed below have met the learning outcomes established by Columbia State Community College for the designated college courses.

High School Course	College Course	College Credits
Information Technologies or other high school courses emphasizing Operating System, Word Procession, Spreadsheet, and Presentation Software	INFS 1010 Computer Applications	3

Additional Requirements:
- Students must pass the high school course with a score of 70% or higher
- Students must score 70% or higher on a comprehensive multiple-choice exam covering the concepts in the course. A variety of questions will be asked to assess knowledge, comprehension and application of microsoft concepts. The exam will be timed (90 minutes).

Course Purpose and Student Learning Outcomes: (1) Identify features of an operating system, create a folder and save a file, use Windows Store apps, and manage your user accounts (2) Personalize the Start screen, manage personal files and folders, copy and move files and folders, and use the Recycle Bin (3) Create a flyer with a picture (4) Format text, paragraphs, and documents (5) Write a resume by using a Word table (6) Write a cover letter and use a template to create a cover sheet (7) Create a research paper that includes citations and a bibliography (8) Create multiple-column newsletter and merged mailing labels (9) Create a sales report with an embedded column chart and sparklines (10) Calculate the value of an inventory (11) Analyze Inventory by applying statistical and logical calculations to data by sorting and filtering data (12) Summarize the data on multiple worksheets (13) Present fund data in a pie chart (14) Make projections by using what-if analysis and present projections in a line chart (15) Create a company overview presentation (16) Create a new product announcement presentation (17) Format a presentation to add visual interest and clarity (18) Enhance a presentation with WordArt and SmartArt (19) Customize a presentation with animation and video (20) Create a presentation that includes data in tables and charts.

Networking Essentials	CITC 1323 CCNA I	3

Additional Requirements:
- Student must pass the Net+ certification test or a Net+ certification practice test administered by high school faculty or a comprehensive written exam at Columbia State Community College.
- Upon passing the Net+ certification or Net+ certification practice test, proof must be provided by the high school faculty member administering the test.

Course Purpose and Student Learning Outcomes: (1) Perform basic binary and related networking math and subnetting (2) Identify types of networks, network devices, and network protocols and their functions (3) Explain the OSI and TCP/IP reference models of networking (4) Understand and make basic configurations for Ethernet on PCs, routers, and switches

Additional requirements:
- Student must pass the A+ certification test or an A+ certification practice test administered by high school faculty or a comprehensive written exam at Columbia State Community College.
- Upon passing the A+ certification or A+ certification practice test, proof must be provided by the high school faculty member administering the test.

Course Purpose and Student Learning Outcomes: (1) Identify, install, configure and troubleshoot hardware components to support computing needs (2) Identify, install, configure and troubleshoot software components to support computing needs (3) Identify, install, configure and troubleshoot necessary components for local area networks.

PROCEDURES

Students wishing to participate in the articulation program must:
1. Meet specific performance requirements as outlined above.
2. Attend the Columbia State Community College assessment day and meet assessment requirements as stated.
3. Pass the assessment requirements for each course for which credit is requested.
4. Enroll at Columbia State Community College within two (2) years of the date of graduation from high school and students will receive credit upon official enrollment at the time of census reporting.
5. Contact the Science Technology and Mathematics Division at Columbia State Community College to request the articulated credit.

_____   _____
President, Columbia State Community College   Date

_____   _____
Director of Schools   Date

Williamson County Schools Pathway

Cyber Defense Program of Study

Computer Science Foundations (C10H11)
Cybersecurity I (C10H19) OR AP Computer Science Principles (G02H44)
Cybersecurity II (C10H20) and/or AP Computer Science Principles (G02H44) or
Dual Enrollment Cybersecurity (C10H24)
Cybersecurity Practicum (C10H21) and/or AP Computer Principles (G02H44)

CoSCC Pathways

Cyber Defense Technical Certificate

Course	Credit Hrs
CITC 1300 Intro to HTML or INFS 1010 Intro to Computer Applications	3
CITC 1301 Intro to Programming and Logic	3
CITC 1351 Principles of Information Assurance	3
CITC 1320 A+ Hardware and Software	3
CITC 1323 CCNA I	3
CITC 2326 Network Security	3
CITC 2352 Digital Forensics	3
Total	21

CITC AAS Degree Cyber Defense Concentration

First Year, Fall Semester		Credit Hrs
ENGL 1010 English Composition I		3
BUSN 1310 Business Communication		3
INFS 1010 Computer Applications		3
CITC 1301 Intro to Programming and Logic		3
PHIL 1040 – Humanities/Fine Arts credit		3
COLS 101 Columbia State College Success		1
	Total	16

First Year, Spring Semester		
MATH 1530 Introductory Statistics		3
CITC 1300 Beginning HTML and CSS		3
CITC 1303 Database Concepts		3
CITC 1307 Intro to Spreadsheets		3
CITC 1323 CCNA I		3
	Total	15

Second Year, Fall Semester		
BUSN 2375 Career Development		3
ECON 2100 Principles of Macroeconomics OR		
ECON 2200 Principles of Microeconomics		3
CITC 1351 Principles of Information Assurance		3
CITC 2326 Network Security		3
CITC 1320 Guided Elective		3
	Total	15

Second Year, Spring Semester		
CITC 2390 CITC Capstone		3
CITC 1372 Android Mobile Applications		3
CITC 2352 Digital Forensics		3
CITC 2372 Guided Elective		3
COMM 2025 Fundamentals of Communication OR		
COMM 2055 Argumentation and Debate		3
	Total	15

	TOTAL CREDIT HOURS	61

Industry Certifications for CoSCC

Certification	CoSCC Course
CompTIA Network+	CITC 1302
CompTIA A+	CITC 1320
Microsoft 70-680	CITC 1330
CompTIA Security	CITC 2326
CompTIA Linux+	CITC 1332
Microsoft MOS	INFS 1010
Microsoft MTA	INFS 1010

AGREEMENT BETWEEN
THE WILLIAMSON COUNTY BOARD OF EDUCATION
and
COLUMBIA STATE COMMUNITY COLLEGE
for
PROVIDING EQUIPMENT FOR A MOBILE CYBER DEFENSE COMPUTER LAB

This Agreement is entered into this the 1st day of September, 2019, by and between the **Williamson County Board of Education** of Franklin, TN (hereinafter "WCS"), and **Columbia State Community College** of Columbia and Franklin, TN (hereinafter "CSCC").

WITNESSETH

WHEREAS, CSCC and WCS desire to provide cyber defense education to dual enrolled students in Williamson County;

WHEREAS, CSCC and WCS desire to provide a mobile facility for lab instruction of cyber defense to serve multiple high schools in Williamson County;

WHEREAS, WCS and CSCC agree that it is appropriate for parties hereto to enter into an agreement for use of the equipment,

NOW, THEREFORE, in consideration of the premises and the mutual agreements contained herein, the parties hereby agree as follows:

1. CSCC will use GIVE Grant funds to purchase 1 mobile classroom units equipped with computers and servers.
2. WCS will make parking areas and electrical connections available for the unit at selected WCS high schools.
3. WCS will provide a truck and driver to move the unit as needed.
4. CSCC shall provide WCS with a calendar and schedule of class times no later than thirty (30) days before said usage shall begin.
5. WCS shall have the authority to use the said equipment at all times during its regular school hours.
6. WCS's IT and maintenance departments shall have the authority to maintain said equipment and repair as needed.
7. CSCC will not at any time use or occupy the Premises in violation of laws, ordinances, or regulations of any government or agency having jurisdiction over said premises.
8. All CSCC employees and contractors shall comply with the criminal background checks and other statutory requirements of its employees and contractors.
9. The parties hereto shall comply with the terms of the Family Educational Rights & Privacy Act (FERPA), 20 USC §1232g, the Children's Internet Protection Act (CIPA), 47 USC §254(h), and other federal and state laws applicable to students.

10. CSCC is a public institution of higher education and a member of the State University and Community College System of Tennessee governed by the Tennessee Board of Regents. As a state entity its liability arising from performance under this agreement shall be subject to and limited to those rights and remedies, if any, available under T. C. A. §§ 9-8-101 through 9-8-407. WCS is a governmental entity existing under the laws of the state of Tennessee and, as such, its liability to third parties for injuries which may result from its performance under this agreement shall be subject to and limited to those rights and remedies, if any, available under the Tennessee Governmental Tort Liability Act, §§ T. C. A. 29-20-201, et seq.

11. Each party shall be solely liable for payment of its portion of all claims, liability, costs, expenses, demands, settlements, or judgments resulting from action or omissions of itself or those for whom it is legally responsible, relating to or arising under this Agreement.

12. This Agreement shall in no way be interpreted as creating an agency or employment relationship between the parties.

13. This term of this agreement shall begin upon execution of this agreement and terminate on July 31, 2020 and shall automatically renew perpetually for one-year periods beginning August 1, 2020 unless terminated by either party upon written notice no later than May 1 of each year.

IN WITNESS WHEREOF, the parties have executed the above-written agreement on the date and year listed below, but effective as of the date first written above.

WILLIAMSON COUNTY SCHOOLS

By:_____   _____
Jason Golden, J.D., Superintendent   Date

COLUMBIA STATE COMMUNITY COLLEGE

By: _____   _____
Janet F. Smith, Ph.D., President   Date

AGREEMENT BETWEEN

Columbia State Community College AND
City of Franklin
TN GIVE GRANTS: Integration of WBL into Curricular Pathways and Cyber Defense Mobile
November 1, 2019- March 31, 2022

COF Contract No. 2019-0278

This Agreement attests City of Franklin's support of Columbia State Community College's 2019 TN GIVE Grants, *Integration of WBL into Curricular Pathways and Cyber Defense Mobile.* Upon the awarding of TN Give Grant funds associated with this proposal and TBR approval, City of Franklin agrees to:

1. Offer unpaid work-based learning (WBL) experiences for Columbia State Computer Information and Technology (CITC) student interns.
2. The WBL will be for a semester or more in duration.
3. The student intern will have an assigned supervisor/mentor who will evaluate the student at regular intervals.
4. The City of Franklin will allow scheduled site visits of the WBL coordinator to evaluate the student intern in the work setting.
5. Along with the WBL Coordinator, the City of Franklin will set guidelines for the student intern and reserves the right to dismiss the student intern for failure to follow guidelines.

This Agreement shall be effective for the period commencing on November 1, 2019 and ending on March 31, 2022. This agreement may be terminated by either party by giving written notice to the other at least thirty (30) days before effective date of termination.

IN WITNESS WHEREOF:

City of Franklin:

_____

Eric S. Stuckey, City Administrator   Date

Columbia State Community College:

_____

Janet F. Smith, Ph.D., President   Date

Tennessee Board of Regents:

_____

Dr. Flora W. Tydings, Chancellor   Date

Approved as to form:

_____

Shauna R. Billingsley, City Attorney

AGREEMENT BETWEEN
Columbia State Community College AND CSpire
TN GIVE GRANTS: Integration of WBL into Curricular Pathways and Cyber Defense Mobile
November 1, 2019- March 31, 2022

This document indicates CSpire's support of Columbia State Community College's 2019 TN GIVE Grants, *Integration of WBL into Curricular Pathways and Cyber Defense Mobile*. Upon the awarding of TN Give Grant funds associated with this proposal and TBR approval, CSpire agrees to:

1. Offer work-based learning (WBL) experiences for Columbia State Computer Information and Technology (CITC) students.
2. The WBL will be for a semester or more in duration.
3. The employed student will have an assigned supervisor/mentor who will evaluate the student at regular intervals.

This Agreement shall be effective for the period commencing on November 1, 2019 and ending on March 31, 2022. This agreement may be terminated by either party by giving written notice to the other at least thirty (30) days before effective date of termination.

IN WITNESS WHEREOF:

CSpire:

9- 3- 2019

Mark Britnell, Service Delivery Manager   Date

Columbia State Community College:

Janet F. Smith, Ph.D., President   Date

Tennessee Board of Regents:

Dr. Flora W. Tydings, Chancellor   Date

))) CJC Technologies

DATE: August 29, 2019

RE: Columbia State Community College TN GIVE GRANTS:
Integration of WBL into Curricular Pathways and Cyber Defense Mobile

This document attests CJC technologies support of Columbia State Community College's 2019 TN GIVE Grant proposals,

1.) Integration of WBL into Curricular Pathways

2.) Cyber Defense Mobile.

Upon the awarding of TN Give Grant funds associated with these grant projects and TBR approval. CJC Technologies, IT Department will provide guidance regarding the identification of requisite skills and knowledge of the curricula targeted in the above grant projects. For the purpose of these two grant projects, CJC Technologies, IT Department will consult with the grant project directors regarding the integration of work based experiences in these curricula.

As part of the support, CJC Technologies also acknowledges the 30-month duration of the TN GIVE Grant period of November 1, 2019-March 31, 2022 and agrees to work with Columbia State within that TN GIVE Grant period.

CJC Technologies,

[signature]   8/29/19

———
Brett Williams, President   Date

Columbia State Community College:

———
Janet F. Smith, Ph.D., President   Date

AGREEMENT BETWEEN

Columbia State Community College AND
Tennessee College of Applied Technology-Dickson
TN GIVE GRANT: Integration of WBL into Curricular Pathways
November 1, 2019- March 31, 2022

This document attests Tennessee College of Applied Technology-Dickson's (TCAT Dickson) support of Columbia State Community College's 2019 TN GIVE Grant, *Integration of WBL into Curricular Pathways*. Upon the awarding of TN Give Grant funds associated with this proposal and TBR approval, TCAT Dickson agrees to the following:

1. Participation of at least three faculty in in-service training and other activities put forth in the grant
2. Host at least one faculty/ teacher in-service activity
3. Work with Columbia State on the Curricular Pathways in the following three programs funded by TN GIVE Grant: a.) AAS Business, Management Concentration, b.) Business Technical Certificate, and the c.) Web Design & Mobile Technologies Technical Certificate
4. A representative designated by TCAT Dickson will serve on the Center of WBL Industry Involvement Advisory Board (CWBL-II)
5. Work with Columbia State faculty in the placement of 12th grade CTE students into WBL placements provided as a result of TN GIVE Grant funding
6. Attendance of at least one faculty at one of four designated conferences. (Attendance funded by this TN GIVE Grant.)

Both the TCAT Dickson System and Columbia State Community College shall comply with all applicable State and Federal laws and regulations, including without limitation with the Family Educational Rights and Privacy Act (FERPA) and College policies and guidelines in the performance of this agreement.

This Agreement shall be effective for the period commencing on November 1, 2019 and ending on March 31, 2022. This agreement may be terminated by either party by giving written notice to the other at least thirty (30) days before effective date of termination.

IN WITNESS WHEREOF:

TCAT Dickson:

Arrita W. Summers   9/20/19

Arrita W. Summers, Ed.D., President   Date

Columbia State Community College:

_____
Janet F. Smith, Ph.D., President   Date

Tennessee Board of Regents:

_____
Dr. Flora W. Tydings, Chancellor   Date

Northern Middle Tennessee
Workforce Board Inc.

September 3, 2019

Mr. Dearl Lampley, Vice President
Columbia State Community College
1665 Hampshire Pike
Columbia, TN 38401

Dear Mr. Lampley

On behalf of the Northern Middle Tennessee Workforce Board and Workforce Essentials, I'm excited to offer my support to Columbia State Community College and Williamson County School's Cyber Defense Mobile Program offered under the Governor's Investment in Vocational Education (GIVE) initiative. The investment in information technology is critical to meet the workforce needs in Williamson County. I offer the Northern Middle Workforce Boards support in the following ways:

- Support mission of Cyber Defense Mobile

- Promote the Cyber Defense Mobile to business community through the American Job Center

- Provide a direct connection to the myriad of services offered in the American Job Center system to customers, students and employers participating in the Cyber Defense Mobile program.

- Co-enroll youth and adult participants who qualify under the Workforce Innovation and Opportunity Act (WIOA) bringing additional supports to the individual to eliminate barriers to training.

- Provide additional support services for qualified WIOA customers to assist in their transition to employment.

If I can be of further assistance or provide insight through a planning and implementation committee, please feel free to call me at 931.905.3500.

Sincerely,

Marla W. Rye
Executive Director

Jeremy Qualls

CCTE Executive Director

Williamson County Schools

August 29, 2019

To Whom it May Concern,

This letter attests the support of the College, Career and Technical Education Department of Williamson County Schools and Columbia State Community College for the 2019 TN GIVE Grant proposal for the *Mobile Cybersecurity Unit* and the funding that is associated with this proposal and TBR approval.

Columbia State and the CCTE Department are fully cooperative and excited to construct a rigorous Cybersecurity program and utilizes the Mobile Cybersecurity Unit.

Jeremy Qualls

September 3, 2019

Dr. Dearl D. Lampley
Vice President of Williamson Co. Campus and External Services
Columbia State Community College
1228 Liberty Pike
Franklin, TN 37067

Dear Dr. Lampley,

It is my pleasure to write in support of Columbia State Community College's Williamson Campus in your application to Governor Lee's Governor's Investment in Vocational Education (GIVE). I am thrilled to learn Columbia State is partnering with Williamson County Schools on this application.

Information technology is an employment sector that continues to grow in Middle Tennessee and across the country. I know that as our economy continues to evolve, jobs in information technology will be in high demand in the foreseeable future. Your proposed project involving Cyber Defense classes delivered in a high-tech, transformable mobile classroom will create career opportunities for students at all 10 public high schools in Williamson County. I understand the mobile unit will also provide a venue for county-wide "hackathon"-type competitions. Through your established industry partnerships with Tractor Supply Company, Jackson National, and Cisco, students are poised to gain real-world experience with this program.

I am excited to support the important work of our economic development partners at Columbia State Community College and look forward to assisting with this program.

Sincerely,

Matt Largen
President and CEO
Williamson, Inc.

Glenn Allison
Tractor Supply Company
5401 Virginia Way
Brentwood, TN 37027

September 6, 2019

Dr. Dearl Lampley
Vice President, Williamson Campus and External Services
Columbia State Community College

Dr. Lampley:

This letter is in support of the Columbia State Community College 2019 TN GIVE Grant proposals:

1. Integration of WBL into Curricular Pathways
2. Cyber Defense Mobile

Upon the awarding of TN Give Grant funds associated with these grant projects and TBR approval, Tractor Supply Company, will assist with guidance regarding the identification of requisite skills and knowledge of the curricula targeted in the above grant projects. For the purpose of these two grant projects, Tractor Supply Company, will consult with the grant project directors regarding the integration of work-based experiences in these curricula.

Tractor Supply Company acknowledges the 30-month duration of the TN GIVE Grant period of November 1, 2019 to March 31, 2022 and agrees to work with Columbia State within that TN GIVE Grant period.

Sincerely,

Glenn Allison

Vice President, Information Technology

**Joint Capstone Program with Columbia State & Tractor Supply Company
Summer-Fall 2018**

As part of Tractor Supply's continued partnership with Columbia State, a new capstone course will be offered to selected students during the Summer-Fall 2018 period. The capstone program will enable students to gain hands-on experience working with the latest technologies, such as Artificial Intelligence (AI), Internet of Things (IoT), Robotics, and other emerging technologies.

About Tractor Supply
Tractor Supply is the largest rural lifestyle retailer in the United States, with over 1700 retail stores and sales of approximately $7.3 billion.

Tractor Supply is committed to growing its business by being the most dependable supplier of relevant products and services for the rural lifestyle, creating customer loyalty through personalized experiences and providing convenience for **Life Out Here** – *anytime, anywhere, and anyway* our customer chooses. Tractor Supply's **ONETractor** strategy is designed to allow TSC to exceed the ever-evolving expectations of customers, positioning TSC for long term growth.

Capstone Program
Selected Columbia State students will research emerging technologies in the Retail industry, develop recommendations on potential use cases for Tractor Supply, and gain hands on experience working with the latest technologies in lab-environment.

Specific areas for capstone study include:
- Artificial Intelligence (AI)
- Big Data & Analytics
- Internet of Things (IoT)
- Other Emerging Technologies (e.g. Blockchain, Robotics, Rural Broadband, etc.)

As part of the capstone program, each student will be assigned a mentor, which will help them understand the Tractor Supply business, the ONETractor strategy, as well as gain an understanding of emerging technologies to support business growth. The scope of the capstone program will include research into a specific area of study, identification of use cases specific to Tractor Supply, and gaining hands on experience developing and testing prototypes in a lab-environment. At the conclusion of the capstone program, each student will prepare a final presentation to be shared with Tractor Supply leadership and Columbia State faculty.

For additional details regarding the Columbia State & Tractor Supply capstone partnership, please reach out to Deepa Janakiraman (djanakiraman@columbiastate.edu) or Glenn Allison (gallison@tractorsupply.com) for further information.

APPENDIX A

Awarding of College Credit to Computer Information graduates of Tennessee Colleges of Technology to the A.A.S. in Computer Information Technology$

Industry Certification	Credit Hours	Course Title
Introduction to Computing: Dantes Exam*	3	CITC 1301 Intro to Programming & Logic
CompTIA Network+*	3+1	CITC 1302 Introduction to Networking + CITC 1102 Lab (if necessary)
Oracle Database Foundations# 1Z0-006* OR Microsoft Office Specialist (MOS) Access*	3	CITC 1303 Database Concepts
Microsoft Certification Application Specialist (MCAS) Word* OR MOS Word*	3	CITC 1306 Microsoft Word
MCAS Excel* OR MOS Excel	3	CITC 1307 Intro to Spreadsheets
Appropriate Industry Certification in Programming language of institution*	3	CITC 1310 Programming I + CITC 1110 OR CITC 1314 JAVA Programming I
Appropriate Industry Certification in Programming language of institution*	3	CITC 1311 Programming II + CITC 1111 OR CITC 1315 JAVA Programming II
CompTIA A+*	3 OR 6	CITC 1320 A+ Hardware & Software OR CITC 1321 A+ Hardware AND CITC 1322 A+ Software
CISCO Certified Entry Networking Technician (CCENT)*	3+3 OR 3	CITC 1323 CCNA I AND CITC 1324 CCNA II OR CITC 2329 Routing and Switching I
CISCO Certified Network Associate (CCNA)*	3+3+3+ 3 OR 3+3	CITC 1323 CCNA I AND CITC 1324 CCNA II AND CITC 2321 CCNA III AND CITC 2322 CCNA IV OR CITC 2329 Routing and Switching I AND CITC 2330 Routing and Switching II
Microsoft Certifications 70-680 OR 70-698*	3	CITC 1330 Microsoft Desktop OS
CompTIA Linux+*	3	CITC 1332 UNIX/Linux Operating System

Industry Certification	Credit Hours	Course Title
Linux Professional Institute – Linux Essentials (LPI-LE)*	3	CITC 1332 UNIX/Linux Operating System
Linux Professional Institute Certification (LPIC-1)*	3	CITC 1332 UNIX/Linux Operating System OR CITC 1333 Linux LPIC -1
Microsoft Certifications 70-410 OR 70-740*	3	CITC 2320 Windows Server I
MCSA – Server 2008, Server 2012, Server 2016 Certification*	3+3+3 OR 3	CITC 2320 Windows Server I AND CITC 2323 Windows Server II AND CITC 2339 Windows Server III OR CITC 2337 Active Directory
CompTIA Security+*	3	CITC 2326 Network Security
Linux Professional Institute Certification (LPIC-2) * or RHCSA Certification*	3	CITC 1332 UNIX/Linux Operating System OR CITC 2331 Unix/Linux System Admin
Help Desk*	3	CITC 2332 User Support/Help Desk
Oracle Database 12c SQL 1Z0-051* + 1Z0-144 Program with PL/SQL* OR Querying Data with Transact-SQL Exam 70-761*	3	CITC 2340 Adv. Database Concepts and Programming OR CITC 2344 Database SQL Programming
MCTS 70-463 (Implementing a Data Warehouse)* + 70-466 (Implementing Data Models & Reports w/SQL Server)*	3	CITC 2348 Data Management Systems
Dell EMC E05-001*	3	CITC 2349 Data Storage
Dell EMC E20-020* OR CompTIA Cloud Essentials*	3	CITC 2367 Cloud Essentials Certification
MCAS Excel* AND		INFS 1010 (Faculty determine which combination of certifications are required for course credit)
MCAS Word* AND	3	
MCAS PowerPoint*		

* Or other current, relevant industry certifications may be substituted by an institution as determined by the faculty. Institution/faculty determine which certifications are current/relevant.
$ Maximum number of credit hours to be awarded/transferred are determined by degree granting institution and must comply with SACSCOC Standard 9.4 requirements for Institutional Credits for Undergraduate degrees

COMPUTER SCIENCE
Major in Tennessee Transfer Pathway with Emphasis in Computer Science (A.S.)

Program Requirements

Students may be required to take additional Learning Support courses.

Communications Requirement
COMM 2025 or COMM 2055
ENGL 1010, 1020

History Requirement (Take 2 courses)
HIST 2010, 2020, 2030, 2310, 2320

Humanities/Fine Arts (Take 3 courses -- one must be a literature course)
ART 1035, 2000, 2020
ENGL 2160, 2860
HUM 1010, 1020
MUS 1030
PHIL 1030, 1040, 2200
THEA 1030
Literature Options: ENGL 2055, 2130, 2235, 2310, 2320

Natural Sciences Requirement
Select one eight-hour sequence from the following:
BIOL 1110, 1120
CHEM 1110, 1120
PHYS 2010, 2020
*PHYS 2110, 2120

Mathematics Requirement
MATH 1910

Social/Behavioral Sciences
ANTH 1230, 1430
ECON 2100, 2200
GEOG 2010
MCOM 1110
PHED 2120
POLS 1010, 1030, 2025, 2035
PSYC 1030, 2130
SOCI 1010, 1040, 2010

Major Required Courses
CISP 1010, 1020, 2410
COLS 101
MATH 1920, 2010

*Students planning to transfer to the University of Tennessee, Knoxville must complete PHYS 2110, 2120.

If you have completed TN eCampus courses, run a degree audit from the student tab in myChargerNet to determine how these courses apply to this program.

Requirements for Graduation include:
- earning 25% of total program credits in residence at Columbia State.
- earn a cumulative GPA of 2.0 or higher.
- taking the Exit Exam.

2018-2019 Catalog Draft

Sample Academic Plan

First Year – Fall Semester

____ ENGL 1010	English Composition I	3
____ Humanities/Fine Arts Requirement		3
____ MATH 1910	Calculus I	4
____ CISP 1010	Computer Science I	4
____ COLS 101	Columbia State College Success	1
		15

First Year – Spring Semester

____ ENGL 1020	English Composition II	3
____ COMM 2025	Fundamentals of Communication **or**	
COMM 2055	Argumentation and Debate	3
____ MATH 1920	Calculus II	4
____ CISP 1020	Computer Science II	4
____ Humanities/Fine Arts Requirement		3
		17

Second Year – Fall Semester

____ CISP 2410	Assembly & Computer Organization	4
____ MATH 2010	Introduction to Linear Algebra	3
____ Natural Science Requirement		4
____ Social/Behavioral Science Requirement		3
____ History Requirement		3
		17

Second Year – Spring Semester

____ Literature Requirement		3
____ Social/Behavioral Science Requirement		3
____ Natural Science Requirement		4
____ History Requirement		3
		13

TOTAL CREDIT HOURS 62

At some universities, foreign language may be required in certain programs that lead to the Bachelor of Science Degree. Complete information regarding foreign language requirements at each university may be found on the transfer and articulation web sites of the Tennessee Board of Regents and the University of Tennessee System. Community college students are encouraged to be familiar with foreign language requirements at the universities and, if applicable, complete the requirements before transferring.

For more information contact:
Deepa Janakiraman at
djanakiraman@columbiastate.edu or 615.790.5984
or
Science, Technology & Math Division office at
931.540.2710

INFORMATION SYSTEMS

Major in Tennessee Transfer Pathway with Emphasis in Information Systems (A.S.)

Program Requirements

Students may be required to take additional Learning Support courses.

Communications Requirement
COMM 2025 or COMM 2055
ENGL 1010, 1020

History Requirement (Take 2 courses)
HIST 2010, 2020, 2030, 2310, 2320

Humanities/Fine Arts (Take 3 courses -- one must be a literature course)
ART 1035, 2000, 2020
ENGL 2160, 2860
HUM 1010, 1020
MUS 1030
PHIL 1030, 1040, 2200
THEA 1030
Literature Options: ENGL 2055, 2130, 2235, 2310, 2320

Natural Sciences Requirement (Take 2 courses)
ASTR 1030
BIOL 1080 (must not be paired with another BIOL)
BIOL 1110, 1120, 2010, 2020
CHEM 1110, 1120
ESCI 1010, 1020
PHYS 2010, 2020, 2110, 2120
PSCI 1030

Mathematics Requirement
MATH 1530**

Social/Behavioral Sciences
ECON 2100, 2200

Major Required Courses
ACCT 1010, 1020
COLS 101
INFS 1010*
MATH 1630, 1830
Electives***

*Students who plan to transfer to Austin Peay State University, East Tennessee State University, and the University of Tennessee at Chattanooga must complete CISP 1010 and 1020**** instead of INFS 1010 and electives. For these students, the total hours in the Major required courses will be 20 hours and total degree hours will be 61.

**Students who plan to transfer to the University of Tennessee must complete MATH 2050, Calculus-based Probability and Statistics.

***Note: An elective can be any college-level course.

If you have completed TN eCampus courses, run a degree audit from the student tab in myChargerNet to determine how these courses apply to this program.

Requirements for Graduation include:
• earning 25% of total program credits in residence at Columbia State.
• earn a cumulative GPA of 2.0 or higher.
• taking the Exit Exam.

2018-2019 Catalog Draft

Sample Academic Plan

First Year – Fall Semester

____ ENGL 1010	English Composition I	3
____ Natural Sciences Requirement		4
____ INFS 1010*	Computer Applications	3
____ ACCT 1010	Principles of Accounting I	3
____ MATH 1530	Introductory Statistics	3
____ COLS 101	Columbia State College Success	1
		17

First Year – Spring Semester

____ ENGL 1020	English Composition II	3
____ Natural Sciences Requirement		4
____ History Requirement		3
____ ACCT 1020	Principles of Accounting II	3
____ Elective ***	(MATH 1130 if required)	3
		16

Second Year – Fall Semester

____ Literature Requirement		3
____ MATH 1630	Finite Math	3
____ History Requirement		3
____ Humanities/Fine Arts		3
____ ECON 2100	Principles of Macroeconomics	3
		15

Second Year – Spring Semester

____ MATH 1830	Applied Calculus	3
____ Humanities/Fine Arts		3
____ COMM 2025	Fundamentals of Communication **or**	
COMM 2055	Argumentation and Debate	3
____ ECON 2200	Principles of Microeconomics	3
		12

TOTAL CREDIT HOURS 60

At some universities, foreign language may be required in certain programs that lead to the Bachelor of Science Degree. Complete information regarding foreign language requirements at each university may be found on the transfer and articulation web sites of the Tennessee Board of Regents and the University of Tennessee System. Community college students are encouraged to be familiar with foreign language requirements at the universities and, if applicable, complete the requirements before transferring.

For more information contact:
Deepa Janakiraman at
djanakiraman@columbiastate.edu or 615.790.5984
or
Science, Technology & Math Division office at
931.540.2710

Appendix 5: Budget

GRANT BUDGET				
CYBER DEFENSE MOBILE				
The grant budget line-item amounts below shall be applicable only to expenses incurred during the following				
Applicable Period: BEGIN: October 24, 2019 END: April 25,				
POLICY 03 Object Line item Reference	**EXPENSE OBJECT LINE-ITEM CATEGORY** [1]	**GRANT CONTRACT**	**GRANTEE PARTICIPATION**	**TOTAL PROJECT**
1,2	Salaries, Benefits & Taxes	$45,000.00	0	$45,000.00
4,15	Professional Fee, Grant & Award [2]	0	0	0
5, 6, 7, 8, 9, 10	Supplies, Telephone, Postage & Shipping, Occupancy, Equipment Rental & Maintenance, Printing & Publications	0	0	0
11, 12	Travel, Conferences & Meetings	$10,000.00	0	$10,000.00
13	Interest [2]	0	0	0
14	Insurance	0	0	0
16	Specific Assistance To Individuals	0	0	0
17	Depreciation [2]	0	0	0
18	Other Non-Personnel [2]	0	0	0
20	Capital Purchase [2]	$724,000.00	0	$724,000.00
22	Indirect Cost	$62,320.00	0	$62,320.00
24	In-Kind Expense	0	0	0
25	**GRAND TOTAL**	**$841,320.00**	**0**	**$841,320.00**

[1] Each expense object line-item shall be defined by the Department of Finance and Administration Policy 03, *Uniform Reporting Requirements and Cost Allocation Plans for Sub recipients of Federal and State Grant Monies, Appendix A*. (posted on the Internet at: www.state.tn.us/finance/act/documents/policy3.pdf).

[2] Applicable detail follows this page if line-item is funded.

Capital Purchases

I. Mobile unit

- 53' customized transformable mobile classroom w/ 1000ft[2]- $500,000

II. Technology Needs

- 24 Lenovo Laptops @ $2,500 ea.-   60,000
- 6 MACBook Laptops @$3,500ea.-   21,000
- 1 Lenovo network server @ $10,000-   10,000

III. Classroom needs

- 16 tables with chairs @ $3,000 ea.-   48,000
- 1 storage unit for laptops @ $2,000 ea.-   2,000
- 3 projection screens @ $1,000 ea.-   3,000
- 1 teaching station @ $25,000 ea.-   25,000

IV. Road Tractor

- 1 used day cab 300 min. hp @ $30,000   30,000

V. Mobile unit and tractor graphic art work-   10,000

VI. Wiring for campus 10 @ $1,000-   10,000

VII. Furniture for work study areas   5,000